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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,575	07/25/2001	Harley R. Myler	9560-002-27	6086

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EXAMINER

TRAN, TRANG U

ART UNIT

PAPER NUMBER

2614

DATE MAILED: 09/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/911,575

Applicant(s)

MYLER ET AL.

Examiner

Trang U. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10, 15-17 and 22-29 are rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art.

In considering claim 1, the admitted prior art discloses all the claimed subject matter, note 1) the claimed receiving a plurality of digital video frames, the plurality of digital video frames comprising a portion of the received video stream and having at least one intercut sequence is met by the video destination 3 and the feature codes which is referred to as "metadata" (Fig. 4, page 6, lines 14-27), within one of the at least one intercut sequence(s), applying a quality analysis technique to at least two of the plurality of digital video frames to produce at least one video quality metric is met by the analyzes 16 of Fig. 4 or the analyzes 20 of Fig. 5 (page 7, lines 8-24), 3) the claimed determining whether each video quality metric indicates presence of a degraded frame is met by the quality measure 17 or 21 (Fig. 5, page 6 line 14 to page 7, line 24), and 4) the claimed for each video quality metric indicating the presence of a degraded frame, identifying the degraded frame is met by the quality measure 17 or 21 (Fig. 5, page 6 line 14 to page 7, line 24).

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In considering claim 2, the claimed further comprising: identifying each of the at least one intercut sequence(s) in the received plurality of digital video frames is met by the video destination 3 and the feature codes which is referred to as "metadata" (Fig. 4, page 6, lines 14-27).

In considering claim 3, the claimed wherein applying a quality analysis technique to at least two of the plurality of digital video frames to produce at least one video quality measurement includes: determining a peak signal to noise ratio is met by page 4, lines 15-18.

In considering claim 4, the claimed wherein applying a quality analysis technique to at least two of the plurality of digital video frames to produce at least one video quality measurement includes: applying a Gabor transform to the at least two of the plurality of digital frames is met by Fig. 3, page 5, lines 23-30.

In considering claim 5, the claimed wherein applying a quality analysis technique to at least two of the plurality of digital video frames to produce at least one video quality measurement includes: applying Marr-Hilfreth and Canny operators to the at least two of the plurality of digital video frames is met by Fig. 3, page 5, lines 23-30.

In considering claim 6, the claimed wherein applying a quality analysis technique to at least two of the plurality of digital video frame to produce at least one quality measurement includes: applying fractal decomposition to the at least two of the plurality of digital video frames is met by Fig. 3, page 5, lines 23-30.

In considering claim 7, the claimed wherein applying a quality analysis technique to at least two of the plurality of digital video frames to produce at least one video quality

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measurement includes: applying Mean Absolute Difference analysis to the at least two of the plurality of digital video frames is met by Fig. 3, page 5, lines 23-30.

In considering claim 8, the claimed wherein applying a quality analysis technique to at least two of plurality of digital video frames to produce at least one video quality measurement includes: determining a correlation coefficient for at least one pair of the at least two of the plurality of video frames is met by the model correlated (Fig. 2, page 5, lines 17-22).

In considering claim 9, the claimed wherein identifying the degraded frame includes: applying a quality analysis technique to at least one of the at least two of the plurality of digital video frames and to at least a third one of the plurality of digital video frames is met by page 4, line 24 to page 5, line 30.

In considering claim 10, the claimed correcting the degraded frame is met by Fig. 2, page 5, lines 17-22.

In considering claim 15, the claimed wherein correcting the degraded frame includes: identifying a predetermined degradation in the degraded frame is met by the quality measure 17 or 21 (Fig. 5, page 6 line 14 to page 7, line 24), and the claimed correcting the predetermined degraded is met by Fig. 2, page 5, lines 17-22.

In considering claim 16, the claimed wherein the predetermined degradation includes one selected from a group consisting of a blocking effect, mosquito noise, and motion compensation noise is met by the blocking effect (page 7, lines 8-29).

In considering claim 17, the claimed wherein identifying the at least one intercut sequence includes: identifying at least one cut in the received plurality of digital video

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frames is met by the video destination 3 and the feature codes which is referred to as "metadata" (Fig. 4, page 6, lines 14-27).

In considering claim 22, the claimed wherein the received video stream includes metadata stream information, and wherein identifying at least one cut in the received plurality of digital video frames includes: analyzing the metadata stream information is met by the video destination 3 and the feature codes which is referred to as "metadata" (Fig. 4, page 6, lines 14-27).

In considering claim 23, the claimed wherein the source video stream is processed to produce the received video stream is met by the video source 1 (page 4, line 19 to page 5, line 5).

In considering claim 24, the claimed wherein the source video stream is processed to produce the received video stream by passing the source video stream through a channel is met by the video destination 3 (page 4, line 19 to page 5, line 5).

In considering claim 25, the claimed wherein the source video stream is processed to produce the received video stream by applying a hypothetical reference circuit to the source video stream is met by channel 2 (Fig. 1, page 4, line 30 to page 5, line 5).

Claim 26 is rejected for the same reason as discussed in claim 1.

In considering claim 27, the claimed wherein the channel comprises a circuit is met by channel 2 (Fig. 1, page 4, line 30 to page 5, line 5).

In considering claim 28, the claimed wherein the repository comprises a database is met by page 4, lines 9-18.

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Claim 29 is rejected for the same reason as discussed in claim 1.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Murphy et al (US Patent No. 5,745,169).

In considering claim 11, the admitted prior art discloses all the limitations as discussed in claims 1 and 10 above, except for providing the claimed wherein correcting the degraded frame includes: removing each of the degraded frame. Murphy et al teach that to provide such a detection and concealing process, the system includes an error detecting and concealing circuit 29, arranged to identify a block of corrupted data and to conceal this block of corrupted data by selecting an equivalent block from a previous transmitted frame (Fig. 3, col. 3, line 55 to col. 4, line 67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the concealing circuit as taught by Murphy et al into the admitted of applicant's prior art's system in order to provide an improved method and apparatus for detecting and correcting the presence of errors in a video signal.

In considering claim 12, the admitted of applicant's prior art discloses all the limitations as discussed in claims 1 and 10 above, except for providing the claimed wherein correcting the degraded frame includes: obtaining a replacement frame for the

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degraded frame. Murphy et al teach that to provide such a detection and concealing process, the system includes an error detecting and concealing circuit 29, arranged to identify a block of corrupted data and to conceal this block of corrupted data by selecting an equivalent block from a previous transmitted frame (Fig. 3, col. 3, line 55 to col. 4, line 67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the concealing circuit as taught by Murphy et al into the admitted prior art's system in order to provide an improved method and apparatus for detecting and correcting the presence of errors in a video signal.

In considering claim 13, the claimed wherein the replacement frame is obtained from the source video stream is met by the error detecting and concealing circuit 29 (Fig. 3, col. 3, line 55 to col. 4, line 67) of Murphy et al.

In considering claim 14, the admitted prior art discloses all the claimed subject matter, note 1) the claimed identifying a degraded portion of the degraded frame is met by the quality measure 17 or 21 (Fig. 5, page 6 line 14 to page 7, line 24). However, the admitted of applicant's prior art explicitly does not disclose the claimed identifying at least one from the plurality of the digital video frames containing an undegraded portion corresponding to the degraded portion of the degraded frame and the claimed replacing the degraded portion of the degraded frame with the undegraded portion. Murphy et al teach that to provide such a detection and concealing process, the system includes an error detecting and concealing circuit 29, arranged to identify a block of corrupted data and to conceal this block of corrupted data by selecting an equivalent block from a previous transmitted frame (Fig. 3, col. 3, line 55 to col. 4, line 67). Therefore, it would

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have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the concealing circuit as taught by Murphy et al into the admitted prior art's system in order to provide an improved method and apparatus for detecting and correcting the presence of errors in a video signal.

5. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Tanaka (US Patent No. 5,251,030).

In considering claim 18, the admitted prior art discloses all the limitations as discussed in claims 1, 2 and 17 above, except for providing 1) the claimed comparing at least a first one of the plurality of digital video frames to at least a second one of the plurality of digital video frames to produce at least one correlation coefficient, 2) the claimed comparing each of the at least one correlation coefficient to a predetermined range, and 3) the claimed for each of the at least one compared correlation coefficient falling outside the predetermined range, identifying at least one frame corresponding to a cut in the received plurality of digital video frames. Tanaka teach that reference block generator 37 accesses frame memory 36 to cause a signal stream in a reference range can be selected from locally decoded signals of the preceding frame as a reference block, the reference range can be varied by adaptive control in accordance with correlation between the current and preceding frames (col. 5, line 10 to col. 6, line 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the correlation method as taught by Tanaka into the admitted prior art's system in order to provide an MC predicting apparatus which ensures a high

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prediction accuracy against an input block and avoids arithmetic operation of an evaluation function from becoming an overhead for image encoding process.

In considering claim 19, the claimed wherein each of the at least one correlation coefficient is normalized is met by col. 5, line 10 to col. 6, line 6 of Tanaka.

In considering claim 20, the claimed wherein each of the at least one correlation coefficient is normalized on a scale of 0 to 1 is met by col. 5, line 10 to col. 6, line 6 of Tanaka.

In considering claim 21, the claimed wherein the predetermined range approximately 0 to 0.9 is met by col. 5, line 10 to col. 6, line 6 of Tanaka.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trang U. Tran** whose telephone number is **(703) 305-0090**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W. Miller**, can be reached at **(703) 305-4795**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

TT TT
September 16, 2003


MICHAEL H. LEE
PRIMARY EXAMINER